SWIS # 27-AA-0007

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 2000
San Luis Obispo, CA 93401-5427

WASTE DISCHARGE REQUIREMENTS ORDER NO. 99-26

Waste Discharger Identification No. 3 270304001

For

SALINAS VALLEY WASTE AUTHORITY
CRAZY HORSE
CLASS III LANDFILL
Monterey County

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds that:

1. The Salinas Valley Waste Management Authority (hereafter "Discharger") owns and operates the Crazy Horse Class III Landfill (hereafter "Landfill").

2. The 160-acre Landfill is located in Monterey County, north of the City of Salinas approximately 1.25 miles from U.S. 101 on Crazy Horse Canyon Road (Attachment "A"). The site is located within Township 13S, Range 3E, Section 27, Mount Diablo Base and Meridian. The property address is 350 Crazy Horse Canyon Road and is legally defined by the Monterey County Assessor as parcel numbers 125-271-39 and 125-271-58.

3. On January 1, 1997, the County of Monterey and the Cities of Salinas, King, Gonzales, Soledad and Greenfield formed the Salinas Valley Solid Waste Authority (Authority) to assume responsibility active landfills of the Salinas Valley Region. The Authority is an autonomous governmental organization funded by landfill tipping fees and controlled by a Board of Directors. The Authority has assumed ownership and operation responsibility at Crazy Horse Landfill.

4. This Waste Discharge Requirements Order (Order) is being revised/updated to incorporate criteria currently applicable to solid waste disposal sites, particularly:

   a. criteria established in California Code of Regulations, Title 27, Division 2, *Solid Waste* (Title 27), effective July 18, 1997; and

   b. criteria established in 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria, Final Rule (Subtitle D), as promulgated October 9, 1991.

5. This Order revises/updates and replaces Order No. 93-95, adopted by the Board on November 16, 1993. Order No. 93-95 regulated all waste discharges to the Landfill and the Landfill's ground water cleanup operations.

6. Land use within one mile of the Landfill is agricultural, light residential, and commercial.

Physical Description

7. The 160-acre fill consists of approximately 90-acres which have been used for municipal waste disposal since 1934. The active fill area includes one 4.8 acre lined cell constructed in 1994, and a second 5.3 acre area completed in 1996. Both active cells are designated for

disposal of approved solid wastes. The site also has a closed 17-acre closed "Old Fill Area" area, a silting basin and lower retention pond. Facilities include parking lots, a maintenance building access roads and a recycling area. On site equipment includes a scalehouse, a perimeter gas collection co-generation system, a gas flare, a passive groundwater treatment system and leachate storage tanks. Refer to **Attachments B and C** for diagram.

8. The Landfill lies within the southeastern portion of the elevated hilly region in northern Monterey County. This area is situated between the Pajaro River and the Salinas River Valleys to the north and south, respectively, and between Monterey Bay to the west and the Gavilan Range to the east. The Landfill is approximately two miles northeast of Prunedale and ten miles north of Salinas and approximately ten miles east of Moss Landing on Monterey Bay. The Landfill serves the Salinas area waste district, which includes the City of Salinas and northeastern Monterey County.

9. The Discharger's data demonstrate natural geologic materials between the base of the Landfill's Waste Management Unit(s) and ground water *cannot* ensure that degradation of beneficial uses of ground water beneath or adjacent to the Landfill will not occur.

10. Surface soils (the upper 25 to 150+ feet) within the Landfill readily transmit water and consist of well sorted, tan to red brown Aromas Sand. Poorly consolidated sandy silts and clays of the Purisima formation underlie the Aromas Sand and are only marginally water bearing. An intrusive granite basement rock underlies the Landfill from less that one hundred to several hundred feet below the fill. This granite outcrops north of the Landfill. These outcrops are caused by seismic deformation along two known fault zones.

11. The closest fault to the Crazy Horse Landfill is about four miles away and capable of producing a Maximum Probable Earthquake (MPE) acceleration of 0.251g. The segment of the San Andreas fault located approximately 10 miles from the Crazy Horse Landfill is capable of producing a MPE of 0.267g. The landfill is designed to withstand a 7.0 magnitude event on the segment of the San Andreas fault four miles from the site, generating an acceleration of 0.390g.

12. The Landfill is *not* within a 100-year flood plain as verified by the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) for Monterey County, California (Panel 60 of 1025, effective June 30, 1984).

Water Resources

13. Analysis of well logs indicates that ground water exists within three hydrogeological zones beneath the site. On the southeast corner of the property (limited to an approximately 20 acre area), a "perched water" aquifer exists above clay stringers within the Aromas Sand Formation approximately 40 to 60 feet below the ground surface. An unconfined, more laterally continuous, aquifer exists deeper in the Aromas Sand Formation at depths ranging from about 20 to 150 feet. A deeper, confined aquifer exists within the Purisima Formation at depths ranging from about 125 to 225 feet. The ground water flow direction within all three formations is generally toward the southwest. Analyses of water in wells along the south side of the site suggest ground water is moving toward the west also. The average hydraulic gradients for the Perched Aquifer, the Aromas Sand Aquifer and the Purisima Formation Aquifer are two to three percent, two to four percent, and ten percent, respectively. Groundwater velocity ranges from 1.5 to 5 feet per day in the Aromas Aquifer and from 0.1 to 0.5 feet per day in the deeper Purisima Aquifer.

14. A system of subsurface drains has been installed at the base of the site, which discharges to a pump pit. Leachate collected in the subdrain is pumped to a storage tank and later transported off-site to a treatment facility. The new lined cell also collects

leachate and empties it to this collection point. The authority is permitted to haul up to 5,000 gallons of leachate daily to the local treatment facility. In the January 1999 Detection Monitoring Report, leachate production volumes for the landfill showed nearly a ten-fold increase from winter rains. The sources of inflow and infiltration have yet to be determined.

15. Surface drainage from the fill areas passes through a silting pond just beyond the toe of the active cell and onto a sediment retention pond located just downgradient of the leachate collection system. Surface drainage flows into Pesante Creek, which represents surface water within Tembladero Slough drainage basin.

16. The Detection Monitoring Program for the Active Fill Area includes eight groundwater monitoring wells in the Aromas (upper) aquifer, seven wells in the Purisima (lower) aquifer, eight perimeter soil-pore gas monitoring probes and two surface water monitoring stations. Refer to **Attachments C and D** for well locations.

17. In 1998, an organic plume was discovered to the west of the Active Fill Area. The plume is currently defined by a single well, A-34. Exploratory borings EB-I and EB-2 helped delineate the extent of this new plume. The plume, discovered in the area of well A34, has migrated over 200 feet beyond the current waste unit boundary. Groundwater elevations suggest the flow in this area is generally deflected south toward the historic canyon, however according to isoconcentration contours presented in the 1998 Monitoring Reports, contamination has likely moved westward past A-34. Aromas monitoring well A-31, which is northwest of well A-34, began showing organic impacts in May 1996, and since then has consistently indicated two or more VOCs at each sampling.

18. Historically, in the area south and southwest of the Closed Module V fill area (Old Fill Area), VOCs were found to be present in the "perched" Aromas aquifer at levels in excess of the Department of Health Services action levels and EPA maximum contaminant levels (MCLs). Trace concentrations of several VOCs were also found to exist in the deeper unconfined aquifer within the Aromas Sand Formation underlying the Landfill.

19. In December 1984 and January 1985, water samples taken from residential wells (the Potter, Plescia, and Backus residences) south of the Landfill were found to contain volatile organic compounds (VOCs). Subsequently, an investigation was conducted in several phases (Preliminary Phase, Phase 1, Phase 11, and Phase 111), commencing on March 21, 1985. The remedial investigation determined the VOCs to be from the release of hazardous waste from drums of banbury wastes (major constituents include rubber materials, carbon black, and other fillers and oils) and mixed solvents (which include mainly benzene and toluene). These materials were deposited within the 17 acre Closed Module V fill area during the 1970's and the contaminated ground water was drawn by nearby residential wells (Potter, Plescia, and Backus). These properties was subsequently purchased, moving the landfill's southern property boundary south to its current location. This Old Fill Area was officially capped and closed in accordance with the Regional Board approved plan in 1989.

20. In 1988, pursuant to its authority under the Section 105 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, commonly referred to as "Superfund"), the United States Environmental Protection Agency (USEPA) proposed the Crazy Horse Landfill for inclusion in the National Priorities List (NPL). The NPL is a list of sites or facilities at which releases of hazardous substances have occurred that are priorities for Superfund evaluation and response. The final listing on the NPL was published in the Federal Register on August 24, 1990.

21. The Regional Board oversees the landfill's ground water remediation activities as part of

the Landfill's routine monitoring and corrective action requirements. USEPA is currently reviewing the groundwater conditions to determine whether there is need for continued remedial actions under Superfund at the site. This decision has been under consideration for over 10 years.

22. Remediation in the Corrective Action Program (CAP) consist of a ground water extraction, treatment and reinjection system as well as a monitoring program intended to assess the progress of the Corrective Action Program. The Corrective Action Monitoring Network, centered between the Closed Module V and the southern border of the property, now consists of 21 ground water monitoring wells, two near surface seeps, two surface water monitoring stations, one influent sampling point, one effluent sampling point and one leachate sampling point. Refer to **Attachment D** for well locations. The original cleanup goals for this corrective action were set at one-half of Federal MCLs.

23. Remediation efforts have been underway in the Closed Module V area since 1985. The treatment system consists of twenty-five ground water extraction wells in both upper and lower aquifers, passive air stripping with induced draft for VOC removal from ground water to the air stream, and a gas phase granulated activated carbon (GAC) column to remove VOCs from the air stream prior to discharge to the atmosphere. Treated ground water is stored with collected leachate in a 500 gallon polyethylene tank to await reinjection to the Aromas aquifer through the 27 recharge wells.

24. The groundwater reinjection system consists of nine recharge galleries, each of which contains three recharge wells. These galleries were designed to form a hydraulic barrier downgradient from the Old Fill area, thereby reducing the spread of contaminants during the cleanup operation. The March 27, 1998 Corrective Action Program System Maintenance Report found that recharge galleries 1, 2, 3, 4, 8 and 9 had been inoperative for as long as two years.

25. Data from monitoring well A-12, located in the "heart" of Old Fill plume, shows contaminant levels initially declined when corrective action began in 1988, then has shown a slight increasing trend since late 1995. This increase is attributed to the gradual failure of the Corrective Action extraction pumps. Well A-20, located south of well A-12 and within 30 feet of the Landfill's southern property boundary, has been sampled regularly since 1989 for volatile and semi-volatile organic compounds (VOCs & SVOCs). In September 1995 a VOC (tetrachlorethene) was detected in this well for the first time. Since that time, tetrachlorethene has been detected regularly in well A-20 and shows an increasing trend (with seasonal variations). Contaminant Isocontour lines of the Aromas (upper) aquifer, as documented in the January, 1999 Qurterly Monitoring Report, the contamination has migrated beyond the property boundary of the landfill. Since no monitoring wells currently exist beyond the landfill boundry within the upper aquifer, it is unclear how far contamination has migrated.

26. There are seven known domestic wells within the immediate downgradient perimeter of the landfill. These wells are approximately shown on **Attachment B** and four (Githens, Whitcomb, Polinski and Burton) are regularly monitored as part of the Adjacent Private Well Sampling Program, as requested by homeowners and residents. Freon (di- and tri-chloroflurocarbons) has been detected in both the Grider and Polinski wells. The Authority considers that these offsite hits to be caused from gas migration.

27. The landfill has a soil-pore gas monitoring system consisting of eight sampling locations around the perimeter of the landfill. With the exception GW-8 (along the northern property boundry), soil-pore gas monitoring has consistently shown elevated levels of methane and VOCs. The system has identified over 31 different VOC at all monitoring points except

GW-8. Methane levels have also remained high for 3 of the 8 probes, sometimes exceeding 20%.

28. In June 1998, the Crazy Horse Landfill completed construction of a perimeter gas control and collection system in an attempt to reduce impacts to ground water from gas migration. The landfill gas extraction system consists of 40 wells on 200-foot centers near the perimeter of the landfill. The system is owned by the Authority and operation is contracted to Ogden Power Pacific, Inc. Monitoring is performed quarterly according to M&RP 99-26. Collected gas is converted to electricity and sold to Pacific Gas and Electric or combusted in the onsite flare.

Beneficial Uses

29. This Order implements the Water Quality Control Plan, Central Coast Basin (Basin Plan). The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters.

30. Present and anticipated beneficial uses of surface waters down gradient of the Landfill include:
    a. municipal and domestic water supply;
    b. ground water recharge;
    c. non-water contact recreation; and
    d. wildlife habitat.

31. Present and anticipated beneficial uses of ground water in the vicinity of the Landfill include:
    a. municipal and domestic water supply;
    b. agricultural water supply; and
    b. industrial use.

32. In addition to this Order, the site is permitted to operate as a Class III facility by Solid Waste Facilities Permit No. 27-AA-0007, which is administered by Monterey County Environmental Health Department.

33. The Landfill's "Existing Permit Limits", as depicted on **Attachment "C"**, is divided into an "Old Fill" area and an "Active Fill Area". The Closed Module I (Old Fill) area occupies approximately 17 acres at the southeastern portion of the property. From 1934 to 1966, this area was operated primarily as a burn dump. From 1966 to 1972, refuse was placed in the Closed Module V fill area at approximately 20 feet thickness. From 1972 to 1981, refuse was not placed within the Closed Module I fill area. From 1981 to 1983, approximately 30 feet of refuse and cover was placed in the Closed Module I fill area to increase the elevation. The area was then covered with a high density, polyethylene membrane and two feet of soil and closed (City Council Resolution No. 13378) in accordance with a Regional Board approved Plan in March 1989. The Active Fill Area has been used for nonhazardous municipal solid waste disposal since 1972 and occupies the remaining portion of the currently permitted Landfill area.

34. The Landfill is developed in Modules according to the July 1996, Master Plan, prepared by Brian A. Stirrat & Associates. Full development includes Modules 1, 2, 3A, 3B, 4, 5, 6, and 7, as depicted on **Attachment "C"**. The total Landfill facility consists of 160 acres, of which approximately 82 acres are currently permitted for nonhazardous solid waste disposal (**"EXISTING PERMIT LIMITS"** as depicted on **Attachment "C"**). Refuse placement over existing refuse fill areas is permitted to a maximum elevation of 605 feet (elevation datum based on control monuments HV-1 through HV-4 on Crazy Horse Canyon Road). To date, a 10 acre section is geocomposite lined on the west side of the property. Landfill areas which have not yet received waste, will be equipped with an approved liner system. A 10-acre portion of the closed Module V (Old Fill Area) has been provided a final cover as described in Finding 18, above.

35. The Landfill is constructed by the areal method and receives approximately 14,000

tons per month of non-hazardous solid waste (470 tpd). Refuse is placed in lifts averaging 10 feet in thickness, with side slopes of 3:1 (horizontal: vertical) or flatter. In some areas, the side slopes and front face of the compacted lift are constructed at a 2:1 maximum gradient. Refuse is spread and compacted in 2-foot-thick layers on a 100+ foot-wide, 3:1 (maximum) sloped working face. Each day the working face is covered with tarps or a six-inch thick daily cover. Currently, Landfill operations are being conducted within the Master Plan's Phase III on the western side of the active fill area **(See Attachment "C")**

36. Present projections indicate the Landfill will be operational until the year 2004, thereby providing for an additional solid waste capacity of 3.0 million yd^3. Years of operation and remaining capacity are based on "EXISTING PERMIT LIMITS" with the original height of 605 feet, as depicted on **Attachment "C".** The July 1996 Master Plan proposed a 30-foot vertical expansion to the current permitted area. This expansion, if approved, would raise the final elevation from 605 feet to 635 feet, increase the capacity by 5.3 million yd^3 and extend the closure date five years from 2004 to 2009.

Statements of Regulation

37. This Order implements the prescriptive standards and performance goals of Title 27, as adopted by the State Water Resources Control Board on July 18, 1997.

38. Wastes containing greater than one percent (>1%) friable asbestos are classified as hazardous under California Code of Regulations, Title 22. Since such wastes do not pose a threat to water quality, Section 25143.7 of the Health and Safety Code permits its disposal in all permitted landfills, providing waste discharge requirements specifically allow the discharge and the wastes are handled and disposed in accordance with other applicable State and Federal statutes and regulations.

39. On October 9, 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations pertaining to solid waste disposal facilities known as 40 CFR, Parts 257 and 258 Solid Waste Disposal Facility Criteria, Final Rule (also known as Subtitle D). Subtitle D regulations establish minimum criteria for location, design, operation, clean-up, and closure, of municipal solid waste landfills. California is authorized by USEPA (an "Approved" State) to implement the Federal Subtitle D regulations. A phased implementation of Subtitle D requirements began on October 9, 1991 and ended on October 9, 1997. Currently all active landfills must comply with Subtitle D regulations.

40. Discharge of waste is a privilege, not a right, and authorization to discharge waste is conditioned upon the discharge complying with provisions of Division 7 of the California Water Code and with any more stringent limitations necessary to implement the Basin Plan, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should assure regulatory conditions are met and mitigate any potential changes in water quality due to the project.

41. This Order contains prohibitions, discharge specifications, and provisions intended to protect the environment by mitigating or avoiding impacts of the project on water quality. This Order is for an existing facility and therefore is exempt from provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15301.

Board Dates

42. On **April 15, 1999,** the Board notified the Discharger and interested agencies and persons of its intention to update waste discharge requirements for this discharge and has provided them with a copy of the proposed Order and an opportunity to submit written comments.

43. After considering all comments pertaining to this discharge, during a public hearing **on July 9, 1999,** in San Luis Obispo, CA , this Order was found consistent with the above findings.

IT IS HEREBY ORDERED pursuant to authority in Section 13263 of the California Water Code, The Salinas Valley Waste Authority, its agents, successors, and assigns may discharge wastes at The Crazy Horse Class III Landfill, providing compliance is maintained with the following:

(Throughout this Order regulations are directly referenced or footnotes are listed to indicate the source of requirements specified. Footnotes are as follows:

a CCR, Title 27, Division 2 (Title 27)
b Water Quality Control Plan, Central Coast Basin (Basin Plan)
c CFR, Part 257 and 258 (Subtitle D)
d California Water Code)

A. PROHIBITIONS

1. Discharge of waste to areas outside the "Designated Disposal Area", as identified in **Attachment C**, is prohibited

2. Discharge of wastes within the "Designated Disposal Area", where refuse placement has not occurred, is prohibited, unless a containment system that includes a composite liner and leachate collection and removal, as described in **Specifications B.24 and B.25,** is provided.[c]

3. Discharge of "hazardous" waste, except for waste that is hazardous due only to its asbestos content, is prohibited. For the purposes of this Order, the term "hazardous" waste is as defined in CCR, Title 27, §20164.[a]

4. Discharge of "designated" waste is prohibited.[a] "Designated" waste is defined in California Water Code §13173.

5. Discharge of bulk or containerized liquid wastes, as defined by EPA Solid Wastes Testing Method 9095 (Paint Filter Liquids Test), is prohibited unless:

   a. The waste and or container is normal household waste other than septic waste.[c];

   b. The waste is leachate or landfill gas condensate discharged in accordance with **Discharge Specification B.5** [c]; or

   c. The waste is dewatered sewage or water treatment sludge discharged in accordance with **Discharge Specification B.4**[a].

   Exemptions to discharging wastes containing less than 50% solids by weight may be granted by the Executive Officer if the Discharger demonstrates the discharge will not exceed the moisture-holding capacity of the Landfill unit(s).[a]

6. Ponding of liquids over solid wastes is prohibited.

7. Discharge of wastes within five feet of the highest anticipated ground water table elevation is prohibited.[a]

8. Discharge of waste within 50 feet of the property line, 100 feet of surface waters, or 100 feet of domestic water supply wells is prohibited.

9. Discharge of waste to surface waters, natural drainage(s), or flood plains is prohibited.[b]

10. Discharge of wastes that would reduce or impair the integrity of containment structures is prohibited.[a]

11. Discharge of wastes that, if commingled with other wastes in the Landfill, could produce violent reaction, fire, explosion, or hazardous reaction products is prohibited.[a]

B. DISCHARGE SPECIFICATIONS

General Specifications

1. The Discharger shall implement attached Monitoring and Reporting Program (Monitoring Program) No. **99-26**, and comply with CCR Title 27, Division 2, Subchapter 3, *Water Monitoring,* for purposes of detecting, characterizing, and responding to releases to ground water, surface water, or the unsaturated zone.[a]

2. Discharge of waste shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed the Water Quality Protection Standard, as set forth in the Monitoring Program, in any monitored media at any Monitoring Point assigned to Detection Monitoring.[a]

3. Discharge of waste shall neither cause nor contribute to a condition of pollution or nuisance to waters of the State, or in any way cause unreasonable impairment of State waters' beneficial uses.[a,d]

4. Discharge of de-watered sewage sludge or water treatment sludge, with less than 50% solids by weight, to Landfill Unit(s) shall meet the following criteria:

   a. The sludge is non-hazardous;

   b. Discharge only to Landfill units equipped with a leachate collection and removal system (LCRS) or acceptable equivalent immediately above the bottom liner;

   c. The sludge contains at least 20 percent solids (by weight) if primary sludge, or at least 15 percent solids if secondary sludge, mixture of primary and secondary sludge, or water treatment sludge; and

   d. A minimum solid to liquid ratio of 5 to 1 by weight shall be maintained to ensure that the co-disposal will not exceed the initial moisture-holding capacity of the nonhazardous solid waste. A more lenient or restrictive solid to liquid ratio may be required by the Executive Officer based on the specific conditions of the waste management unit.[a,c]

   e. Placement of de-watered domestic sludge as soil amendment to promote vegetation over intermediate or final cover may be allowed with written Executive Officer approval.

5. Discharge of landfill gas condensate or leachate to Landfill Unit(s) shall meet the following criteria:

   a. The discharge in non-hazardous;

   b. The receiving unit is designed with a composite liner that meets the performance standard outlined in **Discharge Specification B. 23 and B. 24;**

   c. The receiving unit is designed with a leachate collection and removal system (LCRS) that meets the performance standards outlined in **Discharge Specification B. 25**;

   d. The LCRS has been operationally tested within the past year and the test results indicate normal operation; and

   e. The discharge will not cause the moisture-holding capacity of the receiving unit to be exceeded.[a,c]

6. The handling and disposal of asbestos containing wastes shall be in accordance with all applicable Federal, State, and Local statutes and regulations.

7. Ash wastes, that are tested and shown to be non hazardous, may be landfilled.[a]

8. Wastes discharged in violation of this Order and/or applicable State (CCR, Title 27, Division 2) and Federal (CFR, Title 40, Part 257 & Part 258) shall be removed and relocated.

Wet Weather (November through April)

9. By **October 1** of each year precipitation and drainage controls that are designed, constructed, and maintained to meet the performance standard(s) of Title 27 §20365, shall be in place.

10. The active working face shall be confined to the smallest area practicable.

11. Interim cover (daily or intermediate) shall be designed to minimize percolation through waste. Alternative daily cover materials, such as polyurethane tarps, are encouraged. Alternative cover material must be approved by the Executive Officer and the California Integrated Waste Management Board.[a]

12. Areas that will not be active during the wet season shall receive a minimum one foot thick compacted soil cover designed and constructed to minimize percolation of precipitation through wastes. Vegetation shall be planted and maintained over these area to further minimize infiltration and erosion. The soil cover shall be in-place by **October 1 of each year.**

13. The Discharger shall monitor potential releases from the Landfill related to surface water runoff by complying with all National Pollutant Discharge Elimination System Stormwater Monitoring Program requirements.

Design Criteria

14. Landfill containment structures shall be designed, constructed, and maintained to contain fluid, including landfill gas, waste, and leachate, as required to provide the reasonable protection of aquatic beneficial uses and the prevention of nuisance.[d]

15. All Landfill units, containment structures and drainage facilities shall be designed and constructed under the direct supervision of a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards and performance goals of all State and Federal landfill regulations prior to waste discharge.

16. Construction of containment systems and final cover systems shall be in accordance with a Construction Quality Assurance plan certified by an appropriately registered professional to satisfy the requirements of California Code of Regulations, Title 27 (Title 27), §20324.

17. Containment structures shall receive a final inspection and approval of the construction by Regional Board staff before use of the Unit commences.[a]

18. Engineered alternatives, to the construction or prescriptive standards of State and Federal landfill regulations, will be considered. Alternative designs shall meet the requirements of Title 27, §20080(b) and receive written approval of the Executive Officer.

19. Landfill units, existing and purposed, shall be designed to withstand the maximum probable earthquake (as defined in Title 27 §20164) without damage to the foundation or to the structures which control leachate, surface drainage, or erosion, or gas.

20. A stability analysis, meeting the requirements of Title 27, §21750(f)(5), shall be performed for all designs that influence the containment system.

21. Landfills precipitation control facilities shall be designed, constructed and maintained to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and over-topping due to a 24 hour precipitation event with a predicted frequency of once in 100 years.[a]

22. Hydraulic conductivity of containment structures shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests and field tests shall

be compared to evaluate concurrence of the methods. For liner components laboratory conductivity shall be run with both water and leachate.

23. Containment system design shall incorporate a composite liner overlain by a leachate collection and removal system.

24. At a minimum, composite liners shall include two components; the upper component must consist of a minimum 40-mil thick flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec. FML components consisting of high density polyethylene (HDPE) shall be a least 60- mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

25. Leachate collection and removal systems shall be installed immediately above the composite liner and shall be designed, constructed, maintained, and operated to:

    a. prevent the development hydraulic head on the liner;

    b. maintain depth of fluid in any collection sump at the minimum needed to ensure efficient pump operation; and

    c. function without clogging through the scheduled closure of the waste management unit and during the post-closure maintenance period.[a,c]

Final Closure

26. Landfill closure shall meet the requirements of Title 27, Subchapter 5, *Closure and Post-Closure Maintenance* and be approved by the Executive Officer.

27. The goal of landfill closure, including but not limited to the installation of a final cover, is to minimize the infiltration of water into the waste, thereby minimizing the production of leachate and landfill gas.

28. Final cover systems shall be designed and maintained to meet closure performance goals through out the post closure period of the unit.

29. The Discharger shall implement final closure activities as soon as reasonable after a landfill unit or portion of a unit reaches final fill elevation. Closure activities shall be consistent with the approved closure plan and schedule.[a]

C. PROVISIONS

General Provisions

1. Order **No. 93-95** "Waste Discharge Requirements for Crazy Horse Class III landfill," adopted by the Board on November 16, 1993 , is hereby rescinded.

2. The Discharger shall maintain a copy of this Order at the Landfill and make it available at all times to regulatory agency personnel and to facility operating personnel, who shall be familiar with its contents.

3. The Discharger shall comply with California Code of Regulation, Title 27, Division 2 (Title 27), Code of Federal Regulations, Title 40, Parts 257 and 258, and all other applicable State and Federal landfill regulations whether or not they are specifically referred to in this Order.

4. The Discharger shall be responsible for accurate waste characterization, including determinations of whether or not wastes will be compatible with containment features and other wastes.[a]

5. The Discharger shall have a continuing responsibility to assure protection of usable waters, from discharged wastes and from gases and leachate generated by discharged waste.

6. The Discharger shall obtain and maintain assurances of financial responsibility for site

closure and for initiating and completing corrective action for all known or reasonably foreseeable releases from the Landfill in accordance Title 27, Chapter 6.[a]

Reporting

1. Documentation and reporting for the Landfill shall comply with CCR Title 27, Chapter 4 *Documentation and Reporting For Regulatory Tiers, Permits, WDRs, and Plans*. Additional reporting and notification requirements are included in the Attached Monitoring and Reporting Program.

2. A Joint Technical Document addressing all aspects of site operations, planning, and permitting shall be developed in accordance with Title 27, §21585. All submittals that address topics encompassed by the Joint Technical Document shall be submitted as numerically sequential addendum to the document.

3. Any person signing a report makes the following certification, whether it is expressed or implied:

4. *"I certify under penalty of perjury I have personally examined and am familiar with the information submitted in this document and all attachments and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*

5. All reports shall be signed as follows:

6. For a corporation-by a principal executive officer of at least the level of vice president*;

7. For a partnership or sole proprietorship-by a general partner or the proprietor, respectively*;

8. For a public agency-by either a principal executive officer or ranking elected official*; or,

9. Engineering reports-by a California Registered Civil Engineer or Certified Engineering Geologist.

10. or their "duly authorized representative."

11. Except for data determined to be confidential under Section 13267 (b) of the California Water Code, all reports prepared in accordance with this Order shall be available for public inspection at the Board office.[d]

12. Any report or any amendment or revision thereto which proposes a design change that might affect a Unit's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist.

13. The Discharger shall submit a 'Wet Weather Preparedness Report' by **November 1, of each year.** The report must address, in detail, compliance with all wet weather preparedness related specifications (e.g., **Discharge Specifications B.9** of this Order, and all other relevant regulatory criteria.

14. The Discharger shall submit to the Board, for Executive Officer approval, an updated Preliminary Closure and Post-Closure maintenance plan (Closure Plan) by **January 24, 2000**. The Closure Plan shall meet the closure and post-closure maintenance requirements of Title 27, Chapter 3, Subchapter 5 and shall meet the requirements for Closure/Post-Closure Maintenance Plans contained in Title 27, Chapter 4, Subchapter 4.

15. Due to the releases indicated beyond existing permitted limits on the western side of the landfill property (Finding 16), and on the southern property boundary in the vicinity of well A-20 (Finding 24), the Discharger shall evaluate the landfill's Detection Monitoring system and make necessary recommendations and improvements as prescribed by CCR, Title 27 §20425. Evaluation Monitoring is used to assess the nature and extent of a release from a landfill unit and to design a corrective action plan meeting the requirements of §20430. At a

minimum, in Evaluation Monitoring the discharger shall fully delineate the new release(s), update the Engineering Feasability Study for corrective action and submit an amended Report of Waste Discharge according to CCR Title 27, §20425. All findings shall be submitted to this office no later than **December 22, 1999.**

16. In order to address leachate production and disposal concerns (Finding 26), a complete liquid mass balance shall be performed for all units and drainage facilities based on Title 27 prescriptive design parameters and Monitoring and Reporting program 99-26 Sections C.1 & 2. The goal of this study will be to gain a reasonable understanding of liquid flow paths at this site, as a first step to controlling their impact to groundwater. Once this has been established, alternatives to offsite disposal can be considered for collected leachate. This report shall be submitted to the Board no later than **August 21, 1999.**

17. Submit an updated cost estimate for initiating and completing corrective action for all known or reasonably foreseeable releases from the Landfill by **December 22, 1999.**

Notification

18. The Discharger shall comply with the notification requirements of CCR Title 27, Article 4(c). The Attached Monitoring and Reporting Program includes additional reporting and notification requirements.

19. In the event of any change in ownership or responsibility of this Landfill, the Discharger shall notify the Board in writing of the proposed change. This notification shall be given prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, and post-closure maintenance will be in compliance with applicable State and Federal regulations and the existing Waste Discharge Requirements.

20. Discharger shall promptly notify the Executive Officer of any of the following conditions:

    a. Violation of a discharge prohibition;
    b. Slope failure;

    c. Leachate detection in previously dry leachate collection and removal system; and

    d. Leachate seep or significant production change.[a]

21. Any condition which threatens the Landfill's containment integrity shall be promptly corrected and reported to the Executive Officer.[a]

22. The Discharger shall notify the Board at least 180 days prior to beginning any final Landfill closure activities. If there is no approved Closure Plan, the Discharger must submit a complete Closure Plan at least 240 days prior to beginning any Landfill closure activities.[a]

23. The Executive Officer may require partial and/or final closure of any Landfill unit(s), regardless of whether such unit(s) has reached design capacity, for the protection of water quality. Such a requirement will be made in writing.[a]

24. The post-closure maintenance period shall continue until the Board determines that remaining wastes in the Landfill will not threaten water quality. Post-Closure maintenance cost estimates shall be based on a thirty years of maintenance.[a]

25. Financial assurances, for initiating and completing corrective action for all known or reasonably foreseeable releases, for closure, and for post-closure maintenance, must be obtained and maintained in accordance with Title 27, Chapter 6. Estimates of cost, for closure, post-closure maintenance, and release response, shall be based on site specific conditions and currently approved plans.[a]
    Report Due: August 21, 1999

26. Hazardous waste warning signs that adequately inform and warn users of hazardous waste restrictions shall be posted on a legible roadway sign at the entrance in both English and Spanish. The signs shall also list penalties for illegal dumping. A specific list of Hazardous Wastes and other types of materials prohibited at the Landfill shall be provided to commercial waste haulers—and shall be available to all other users upon request.

27. Construction, alteration, destruction, or abandonment of monitoring wells shall comply with all notice and reporting requirements of the State Department of Water Resources as require by Sections 13750 through 13755 of the California Water Code.[d]

28. Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267 of the California Water Code, or falsifying any information provided therein, is guilty of a misdemeanor.[d]

29. The Discharger and/or any person who violates this Order and/or who intentionally or negligently discharges waste, causes or permits waste to be deposited where it is discharged to waters of the state, may be liable for civil and/or criminal remedies, as appropriate, pursuant to the California Water Code.[d]

30. As part of the annual report required by the attached Monitoring and Reporting requirement, the Discharger shall address compliance with all terms of this Order.

Title 27 Site Documentation Update

31. The Discharger shall review, for compliance with Subchapter 2 of Title 27, the Landfill's classification and siting (Article 3), and construction standards (Article 4). A report discussing the sites compliance with each specific requirement (e.g., Five foot separation from groundwater as required by §20240(c)) shall be submitted by **August 21, 1999**. In cases where standards are not currently met, a schedule for retrofitting the facility shall be submitted or a finding that the retrofit is not feasible shall be made. Feasibility determination shall be made in accordance with requirements for engineered alternatives, Title 27, §20080(c).

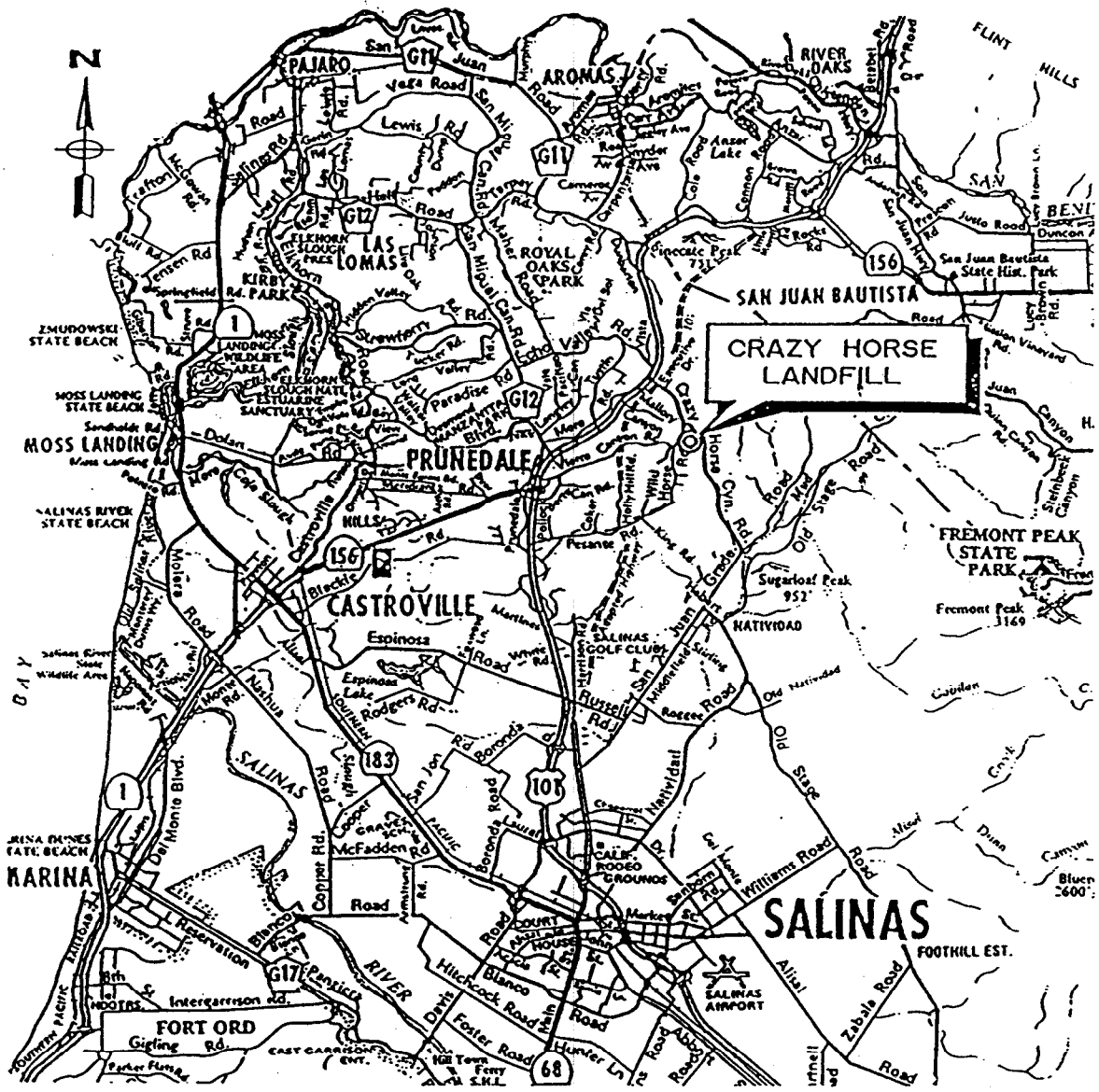
32. Submit a copy of the Emergency Response Plan (§21132) by August 21, 1988.

33. The Board will review this Order periodically and may revise its requirements when necessary.

I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on July 9, 1999.

for Executive Officer

Sphillip/t27chwdr



NOT TO SCALE

FIGURE 1

REGIONAL SETTING

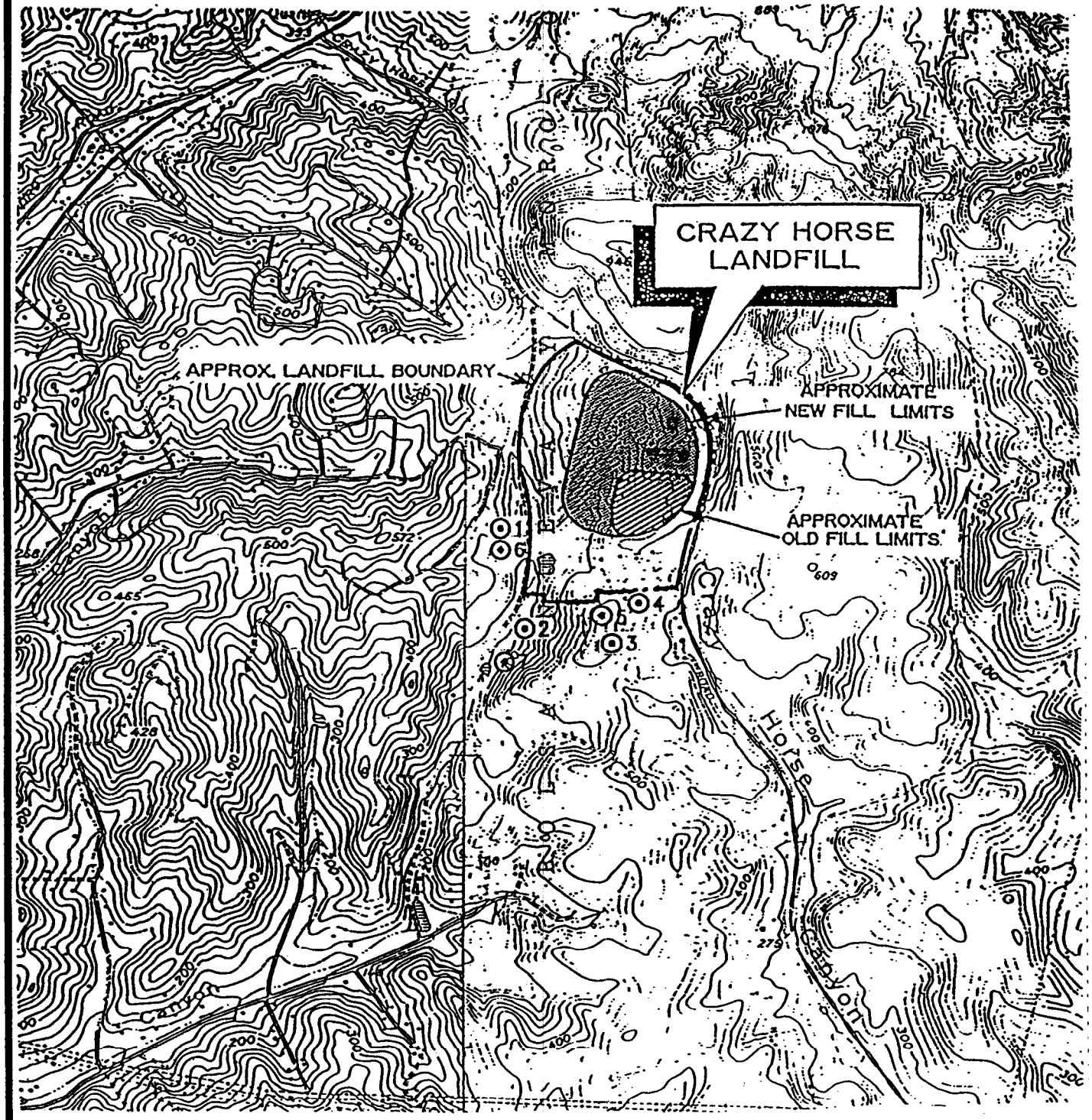
DMP AND CAP MONITORING REPORT, IV Qtr. 1998
CRAZY HORSE CLASS III LANDFILL
SALINAS, CALIFORNIA

REFERENCE:
BASE MAP FROM "MO
ISSUED BY: "COMPASS ... ...

ATTACHMENT A

.ogic Associates
Hydrogeologists, and Engineers

		DATE:	JOB NO.
	VL	JANUARY 1999	9847



NOT TO SCALE

APPROXIMATE RESIDENTIAL WELL LOCATIONS:

- ⊙1 – GITHENS WELL
- ⊙2 – WHITCOMB WELL
- ⊙3 – POLINSKI WELL
- ⊙4 – BURTON WELL
- ⊙5 – GRIDER WELL
- ⊙6 – GROSSEN WELL
- ⊙7 – LEIGHT WELL

REFERENCE:
BASE MAP FROM "U:
PRUNDALE AND SAN

FIGURE 2

SITE LOCATION

DMP AND CAP MONITORING REPORT, IV Qtr. 1998
CRAZY HORSE CLASS III LANDFILL
SALINAS, CALIFORNIA

GeoLogic Associates
gists, Hydrogeologists, and Engineers

	DATE:	JOB NO.
	JANUARY 1999	9847

ATTACHMENT B

ATTACHMENT C

LEGEND:

- SOIL PORE GAS MONITORING WELL
- DETECTION MONITORING PROGRAM MONITORING WELL
- SURFACE WATER MONITORING STATION

GRAPHIC SCALE

400 0 200 400 800

(IN FEET)

1 inch = 400 ft.

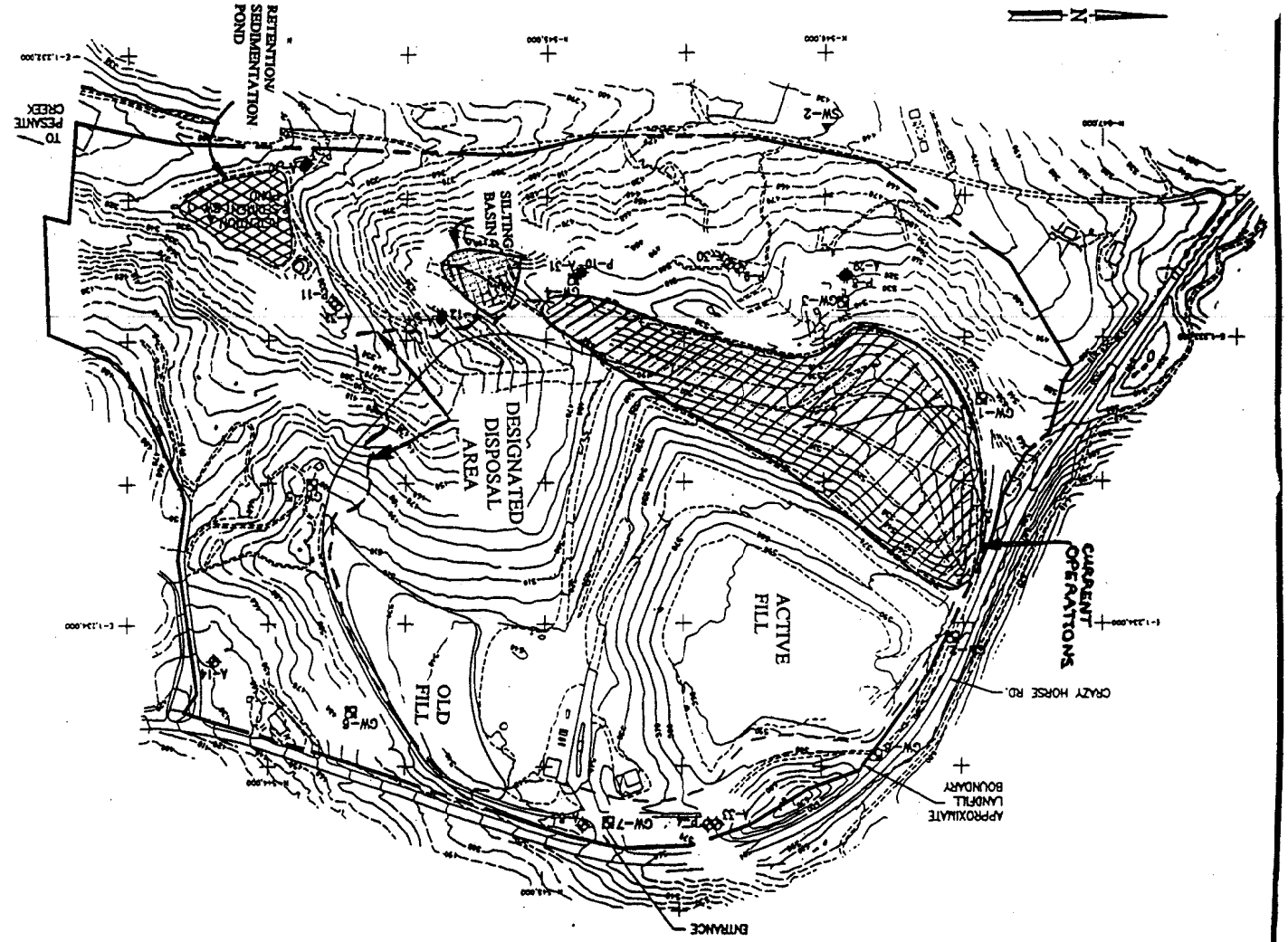


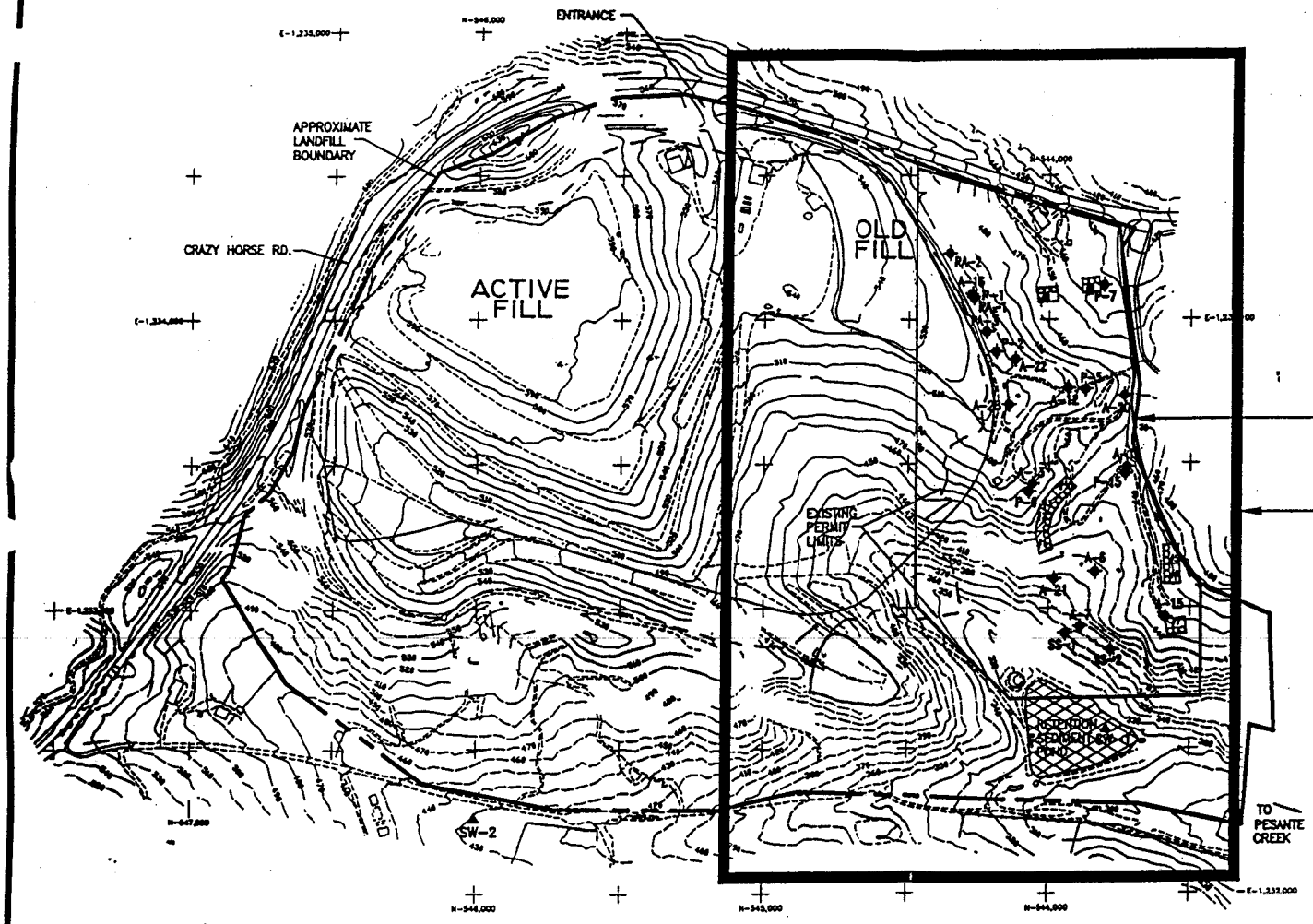
FIGURE 3

LANDFILL TOPOGRAPHY AND DMP MONITORING STATION LOCATIONS

DMP AND CAP MONITORING REPORT, IV Qtr. 1998
CRAZY HORSE CLASS III LANDFILL
SALINAS, CALIFORNIA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	JANUARY 1999	9647



ATTACHMENT D

FIGURE 4

CORRECTIVE ACTION PROGRAM REME REA

DMP AND CAP MONITORING REPORT, IV Qtr. 1998
CRAZY HORSE CLASS II LANDFILL
SALINAS, CALIFORNIA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	JANUARY 1999	9647

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

Revised MONITORING AND REPORTING PROGRAM NO. 99-26

Waste Discharger Identification No. 3-270304001

For

CRAZY HORSE CANYON
CLASS III LANDFILL
Monterey County

Notes:
(1)Capitalized terms are defined in Part V. (2)References are to this Monitoring and Reporting Program, unless otherwise indicated. (3)"Discharger" and "Landfill" are defined in the associated WDR (Order No. 99-26).

PART I: MONITORING PARAMETERS AND SCHEDULE

Unless otherwise indicated, all monitoring and observations shall be reported as outlined in Part III.

A. SITE INSPECTIONS

The Discharger shall inspect the Landfill in accordance with the following schedule, and record, at a minimum, Standard Observations (Part IV).
Site Inspection Schedule:

1. During the wet season (October through April), following each storm which produces stormwater discharge, with inspections performed at least monthly. Additionally, the Discharger shall record the following information;

   a. Total precipitation during the Monitoring Period; and
   b. Return rating of most intense 24 -hour storm (e.g., 25 year recurrence interval).

2. During the dry season a minimum of one inspection every three months.

B. INTAKE MONITORING

The following parameters associated with waste in-flow shall be recorded and included in regular Monitoring Reports:

1. Log of all loads that required characterization data prior to discharge (e.g., contaminated soils loads, semi-liquid loads, asbestos loads). The log shall include the results of any characterization testing required by the operator prior to acceptance;

2. Log of random load checking program. The random load check record shall demonstrate compliance with the Waste Discharge Requirements for load checking. The log shall contain a record of refused loads, including the type of waste refused, and the date, name, address , and phone number of the party attempting to dispose of the waste.

C. POLLUTION CONTROL SYSTEM(S)

The Discharger shall inspect all control systems (e.g., leachate collection, groundwater extraction, gas extraction) and record the following information as appropriate:

1. Leachate Collection System

   a. The following routine operational checks are required. Additional diagnostics or maintenance performed outside these general requirements shall be reported.
      - Weekly - inspect entire system for containment and collection system integrity;
      - Annually -Testing and demonstration of proper operation of the leachate collection system as required by CCR Title 27 §20340(d). Annual results shall be reported consistently to allow year to year comparison. The absence or presence of biofouling shall be specifically addressed in the testing report.

   b. The following data are required. Data collected in addition to these general requirements shall be reported.
      - Record daily, weekly and monthly leachate volumes. Indicate how volume measurements are made. Report disposal method utilized. When more than one disposal method is used, be volume-specific for each method.
      - Analyze leachate for Monitoring Parameters quarterly. Every fifth year analyze for COCs.
      - For sites where leachate is used for dust control, annually demonstrate that leachate is non-hazardous.
      - Compute contaminant mass removed on a monthly basis using most recent contaminant concentration data and monthly leachate collection volume. Report monthly and running total.

2. Groundwater Extraction System

   a. The following routine operational checks are required. Additional diagnostics or maintenance performed outside these general requirements shall also be reported.
      - Monthly - inspect entire system for containment and collection system integrity. Include monthly inspection check-off sheet with monitoring reports.
      - Perform routine preventive maintenance focused on keeping the system at design operation. All scheduled and unscheduled maintenance shall be summarized and reported.
      - Annually -Test and demonstrate proper operation of the collection system. The summary shall outline downtime cause and duration, as well as major system changes.

   b. The following data are required. Data collected in addition to these general requirements shall be reported.
      - Record, monthly volumes of groundwater extracted from each well and daily volumes from entire system. These monthly volumes will be recorded from totalizers before and after the treatment system. Indicate how volume measurements are made. Report disposal method utilized. When more than one disposal method is used, be volume-specific for each method.
      - Analyze influent and effluent flow for Monitoring Parameters quarterly.
      - Compute contaminant mass removed on a monthly basis using most recent contaminant concentration data and monthly collection volume.

3. Gas Extraction System(s)

   a. The following routine operational checks are required. Additional diagnostics or maintenance performed outside these general requirements shall also be reported.
      - Monthly - inspect entire system for containment and collection system integrity. Include monthly inspection check-off sheet with monitoring reports.
      - Perform routine preventive maintenance focused on keeping the system at design operation. All scheduled and unscheduled maintenance shall be summarized and reported.
      - Annually -Testing and demonstration of proper operation of the collection system. Submit an annual operational summary for the system. The summary shall outline downtime cause and duration, as well as major system changes.

   b. The following data are required for each separate landfill gas collection system. Data collected in addition to these general requirements shall be reported.
      - Record weekly and monthly volumes of extracted gas. Indicate how volume measurement is made.
      - Record weekly and monthly volumes of collected gas condensate. Report disposal method utilized. When more than one disposal method is used, be volume-specific for each method.
      - Sample gas collection header and gas condensate annually and analyze for VOCs (method TO-14).
      - Using most recent contaminant concentration data and monthly collection volume, compute contaminant mass removed on a monthly basis.

   c. Landfill Gas Perimeter Wells (GW 1-8) shall be sampled quarterly and analyzed for methane. The wells shall be analyzed for volatile organics (Method TO-14) on an annual basis.

D. ANALYTICAL MONITORING

The Discharger shall monitor the Landfill in accordance with the following sampling schedule(s). Monitoring locations are shown on **Attachments C and D**. Sampling, analyses, and reporting are also discussed in and shall comply with Parts II and III. Data collection shall occur during the monitoring period and not within 30 days of a previous or subsequent routine sampling event. **Quarterly monitoring periods: Winter (January 1 - March 31), report is due April 30; Spring (April 1 - June 30), report is due July 31; Summer (July 1 - September 30), report is due October 31; Fall (October 1 - December 31), report is due January 31.** Semi-annual monitoring shall be performed in conjunction with Winter and Summer quarter monitoring. Annual monitoring shall be performed in conjunction with Summer quarter monitoring. The annual report is due January 31 for the year just ended and may be included with the fourth quarterly report.

1. Constituent of Concern Monitoring

   The Constituents of Concern (COC) parameter includes all constituents listed in Appendix II to 40 CFR, part 258. Monitoring for COCs shall encompass only those constituents that do not also serve as Monitoring Parameters. Analysis of COCs shall be carried out once every five years at each of the site's groundwater monitoring points, and as required due to an indication of release (Part III.C.4). **Wells that have not previously been sampled for COCs shall be sampled and analyzed for all COCs within six months of this program becoming effective.**

2. General Parameter Monitoring (Aromas Aquifer, Vadose Zone, Surface Water)

Sample Location (see Attachment A)	Monitoring Program		Parameter/Frequency	
	Detection	Corrective	VOC[1]	Inorganic-Parameter[2]
A-1	X	X	Quarterly	Quarterly
A-6		X	Semi-annual	Semi-annual
A-7	X	X	Quarterly	Quarterly
A-8 (inorganic background)	X	X	Quarterly	Quarterly
A-10	X		Quarterly	Quarterly
A-11		X	Semi-annual	Semi-annual
A-12		X	Quarterly	Quarterly
A-13		X	Semi-annual	Semi-annual
A-14 (background)	X		Quarterly	Quarterly
A-15	X		Quarterly	Quarterly
A-16		X	Semi-annual	Semi-annual
A-20	X	X	Quarterly	Quarterly
A-21		X	Semi-annual	Semi-annual
A-22		X	Semi-annual	Semi-annual
A-29	X		Quarterly	Quarterly
A-30	X		Quarterly	Quarterly
A-31	X		Quarterly	Quarterly
A-32	X		Quarterly	Quarterly
A-34	X		Quarterly	Quarterly
Gas Perimeter Wells	X		Quarterly ($\%CH_4$)	Annually
Retention Pond		X	Quarterly	
Retention Pond Discharge		X	IAW Stormwater Program[3]	

[1] Volatile Organic Compounds: USEPA method 8260 for liquid, method TO-14 for gas. Methane levels will be measured quarterly by field instruments.

[2] Inorganic parameters:

Laboratory: chloride, magnesium, nitrate as nitrogen, dissolve oxygen, sodium, TDS

Field: pH, EC, temperature, turbidity.

[3] Stormwater inorganic parameters:

Laboratory: pH, total suspended solids, EC, and total organic carbon or oil & grease.

3. General Parameter Monitoring (Purisima Aquifer and Support Systems)

Sample Location (see Attachment A)	Monitoring Program		Parameter/Frequency	
	Detection	Corrective	VOC[1]	Inorganic-Parameter[2]
P-1	X	X	Quarterly	Quarterly
P-2		X	Semi-annual	Semi-annual
P-3	X		Quarterly	Quarterly
P-4 (background)	X	X	Quarterly	Quarterly
P-5		X	Quarterly	Quarterly
P-6		X	Semi-annual	Semi-annual
P-7 (background)		X	Quarterly	Quarterly
P-8	X		Semi-annual	Semi-annual
P-9	X		Quarterly	Quarterly
P-10	X		Quarterly	Quarterly
P-11	X		Semi-annual	Semi-annual
P-12	X	X	Quarterly	Quarterly
P-13		X	Semi-annual	Semi-annual
P-14		X	Semi-annual	Semi-annual
P-15	X		Quarterly	Quarterly
Treatment System Inf.		X	Quarterly	Quarterly
Treatment System Eff.		X	Quarterly	Quarterly
Githens Well	X		Quarterly	Quarterly
Whitcomb Well	X		Quarterly	Quarterly
Polinski Well	X		Quarterly	Quarterly
Burton Well	X		Quarterly	Quarterly
Leachate		X	Annually	Annually
Landfill Gas Collection Header(s)		X	Annually	
Landfill Gas Condensate.		X	Annually	

[1] Volatile Organic Compounds: USEPA method 8260 for liquid, method TO-14 for gas. Methane will be measured quarterly by field instruments.

[2] Inorganic parameters:

Laboratory: chloride, magnesium, nitrate as nitrogen, dissolve oxygen, sodium, TDS

Field: pH, EC, temperature, turbidity

[3] Stormwater inorganic parameters:

Laboratory: pH, total suspended solids, EC, and total organic carbon or oil & grease.

4. Stormwater Monitoring
   Monitor stormwater discharge point(s) in accordance with your National Pollutant Discharge Elimination System permit.

5. Groundwater Flow Rate and Direction
   For each monitored groundwater zone, the Discharger shall measure the groundwater elevation in each available well and piezometer at least once each quarter, including the times of expected highest and lowest elevations of the water level. The Discharger shall also determine the presence of horizontal and vertical gradients, groundwater flow rate, and flow direction for the respective groundwater zone.

6. Sample Procurement Limitation
   For any given monitored medium, the samples taken from Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall be collected within a time period not exceeding 30 days, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Sampling events for separate monitoring periods shall not occur within 30 days of each other.

PART II: SAMPLE COLLECTION AND ANALYSIS

A. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA publication "SW-846"), and in accordance with an approved sampling and analysis plan. Water analysis shall be performed by a laboratory certified for these analyses by the State of California. Specific methods of analysis must be identified. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from Monitoring Points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., Trace) in historical data for that medium, the analytical method having the lowest Method Detection Limit (MDL) shall be selected.

2. Trace results (results falling between the MDL and the Practical Quantitation Limit) shall be reported as such.

3. MDLs and Practical Quantitation Limits shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits are defined in Part IV and shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.

4. All quality assurance and quality control (QA/QC) data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:
   a. the method, equipment, and analytical detection limits;
   b. the recovery rates, an explanation for any recovery rate that is outside the USEPA-specified recovery rate;
   c. the results of equipment and method blanks;
   d. the results of spiked and surrogate samples;

e. the frequency of quality control analysis;
f. chain of custody logs; and
g. the name and qualifications of the person(s) performing the analyses.

5. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.

6. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in an attempt to identify and more accurately quantify the unknown analyte(s).

B. STATISTICAL ANALYSIS and NON-STATISTICAL METHODS

1. For Detection Monitoring the Discharger shall use statistical methods to analyze COCs and Monitoring Parameters detected in ten percent or more of applicable historical samples. Statistical methods will be used to generate concentration limits as outlined below (Part II.C). The Discharger may propose and use any statistical method that meets the requirements of California Code of Regulations, Title 27,§20415(e)(7). All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

2. The Discharger shall use the following non-statistical method for analyzing constituents which are detected in less than ten percent of applicable historical samples. This method involves a two-step process:

   a. From constituents to which the method applies, compile a well specific list of those constituents which exceed their respective MDL. The list shall be compiled based on either the data from the single sample or in cases of multiple independent samples, from the sample which contains the largest number of constituents;
   b. Evaluate whether the listed constituents meet either of two possible triggering conditions: the list, from a single well, either contains two or more constituents, or the list contains one constituent which equals or exceeds the constituent's PQL. If either condition is met, the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate re-test procedure under Part III.C.

C. CONCENTRATION LIMIT DETERMINATION

1. For the purpose of establishing Concentration Limits for COCs and Monitoring Parameters detected in more than ten percent of a medium's samples, the Discharger shall:

   a. Statistically analyze existing monitoring data (Part II), and propose, to the Executive Officer, statistically derived Concentration Limits for each COC and each Monitoring Parameter at each Background Monitoring Point (inter-well comparisons) or each Monitoring Point (intra-well comparisons) for which sufficient data exist;
   b. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect and analyze samples for constituents which require additional data. Once sufficient data are obtained, the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years;
   c. Concentration limits for all Monitoring Parameters and COCs shall be proposed for all new background monitoring points (inter-well comparisons) or all new monitoring points (intra-well comparisons), including any added by this Order, within two calendar years of initial well sampling.

2. Once established, concentration limits shall be reviewed annually by the Discharger. The past year's data will be reviewed for application to revision of concentration limits. When appropriate, new concentration limits shall be proposed.

D. RE-TEST PROCEDURE

1. In the event that the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the reporting requirements of IV.C.2. and, within 30 days of receipt of analytical results, collect two new suites of samples for the COCs or Monitoring Parameters at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test.

2. Analyze each of the two suites of re-test data using the same statistical method (or non-statistical comparison), that provided the tentative indication of a release. If the test results of either (or both) of the re-test data suites confirms the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of Part III.C.

3. Re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the COCs or Monitoring Parameter(s) which triggered the indication. When a member of the VOCcomposite parameter is re-tested, the result of the entire VOCcomposite shall be reported. In that case, a re-test shall validate the original release indication even if the detected constituent(s) in the re-test sample(s) differs from those detected in the sample which initiated the re-test.

E. RECORDS TO BE MAINTAINED

Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following for each sample:

1. Identity of sample, Monitoring Point from which it was taken, and individual who obtained the sample;

2. Date and time of sampling;

3. Date and time that analyses were started and completed, and the name of personnel performing each analysis;

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

5. Results of analyses, and Method Detection Limit and Practical Quantitation Limit for each analysis; and

6. A complete chain of custody log.

PART III: REPORTING

A. MONITORING REPORT

A written Monitoring Report shall be submitted Quarterly by April 30, July 31, October 31, and January 31 of each year. The report shall address all facets of the Landfill's monitoring. Reports shall include all data collected as part of the Monitoring Program, and the following:

1. Letter of Transmittal

   A letter transmitting the essential points shall accompany each report. The letter shall include a discussion of violations that occurred since the last such report was submitted and shall describe actions taken or planned for correcting those violations. If no new violations have been discovered since the last submittal, this shall be stated in the transmittal letter. Both the monitoring report and the transmittal letter shall be signed by: for private facilities, a principal executive officer at the level of vice president; for public agencies, the director of the agency.

The transmittal letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. Compliance Summary
   The update shall contain at least:

   a. Discussion of compliance with concentration limits, indication(s) of a release and actions taken to address the release.
   b. For each monitored groundwater body, calculate groundwater velocity and, based upon water level elevations taken during the Monitoring Period, graphically present groundwater flow direction under and around the site.

3. Graphical Presentation of Analytical Data
   For each Monitoring Point in each medium, submit, in graphical format, the complete history of laboratory analytical data. Graphs shall effectively illustrate trends and/or variations in the analytical data. Each graph shall plot a single constituent concentration over time at one (for intra-well comparisons) or more (for inter-well comparisons) monitoring points in a single medium. Maximum contaminant levels (MCL) and/or concentration limits shall be graphed along with constituent concentrations where applicable. When multiple samples are taken, graphs shall plot each datum, rather than plotting mean values.

4. Corrective Action Summary
   Discuss significant aspects of any corrective action measures conducted during the monitoring period. Calculate pollutant load removed from each impacted medium by mass (water, gas, leachate) removal system(s). Mass removal calculations shall be based on actual analytical data as required by Part I.E. The summary should relate mass removal data to the violation the corrective action is addressing.

5. Laboratory Results
   Laboratory results and statements demonstrating compliance with Part II and results of analyses performed at the Landfill, outside the requirements of this Monitoring and Reporting Program, shall be summarized and reported.

6. Sampling Summary

   a. For each monitoring well addressed by the report: a description of; 1) the method and time of water level measurement, 2) the method of purging and purge rate and well recovery time, 3) field parameter readings, 4) field equipment calibration, and 5) method of disposing the purge water.
   b. For each monitoring point addressed by the report, a description of the type of sampling device used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; types of containers and preservatives used; the date and time of sampling; the name and qualifications of the person actually taking the samples; description of any anomalies or other appropriate observations).

7. Standard Observations
   A summary of Standard Observations (Part IV) made during the Monitoring Period.

8. Map(s)
   A map or aerial photograph showing monitoring locations, relative physical features, and groundwater contours to the greatest degree of accuracy possible.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report to the Board covering the previous monitoring year. The annual Monitoring Period ends December 31. This report may be combined with the final Monitoring Report of the year and

shall be submitted no later than January 31 each year. The annual report must include the information outlined above and the following:

1. Discussion
   Include a comprehensive discussion of the compliance record, a review of the past year's significant monitoring system and operational changes, a summary of corrective action results and milestones, and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.

2. Statistical Limit Review
   Statistically derived concentration limits shall be reviewed annually and revised as necessary. Data collected during the year shall be discussed and considered for inclusion in, and determination of, proposed limits for the coming year. For statistical limits that are changed from the previous year, include a comprehensive discussion of the proposed limit for Executive Officer review and consideration.

3. Analytical Data
   Complete historical analytical data presented in tabular form and on 3.5" diskettes, in Excel™ format or in another file format acceptable to the Executive Officer.

4. Leachate Collection System
   Results of annual leachate system testing as required by Part I.C. At sites where leachate is used for dust control, testing that shows the leachate is non-hazardous shall be submitted annually.

5. Map(s)
   A map, or set of maps, that indicate(s) the type of cover material in place (final, long-term intermediate, or intermediate) over inactive and completed areas.

C. CONTINGENCY RESPONSE

1. Leachate Seep
   The Discharger shall, within 24 hours, report by telephone concerning the discovery of previously unreported seepage from the disposal area. A written report shall be filed with the Board within seven days, containing at least the following information:

   a. A map showing the location(s) of seepage;
   b. An estimate of the flow rate;
   c. A description of the nature of the discharge (e.g., pertinent observations and analyses); and
   d. A summary of corrective measures both taken and proposed.

2. Response to an Initial Indication of a Release
   Should the initial statistical or non-statistical comparison (under Part II.B) indicate that a new release is tentatively identified, the Discharger shall:

   a. Within 24 hours, notify the Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved;
   b. Provide written notification by certified mail within seven days of such determination; and
   c. Perform either of the following:
      i. Shall carry out a discrete re-test in accordance with Part II.D. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall carry out the requirements of Part

III.C.4. In any case, the Discharger shall inform the Board of the re-test outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days. or;

ii. Make a determination, in accordance with CCR Title 27, §20420(j)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.

3. Physical Evidence of a Release
   If either the Discharger or the Executive Officer determines that there is significant physical evidence of a new release [Title 27 §20385(a)(3)], the Discharger shall conclude that a release has been discovered and shall:

   a. Within seven days notify the Board of this fact by certified mail (or acknowledge the Board's determination);
   b. Carry out the requirements of Part III C.4. for potentially-affected media; and
   c. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the indication.

4. Release Discovery Response
   If the Discharger concludes that a new release has been discovered the following steps shall be carried out:

   a. If this conclusion is not based upon monitoring for COCs, the Discharger shall sample for COCs at Monitoring Points in the affected medium. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Board, by certified mail, of the concentration of COCs at each Monitoring Point; this notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration;
   b. The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that:
      (1) Meets the requirements of Title 27, §20420 and §20425; and
      (2) Satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well directly down-gradient of the center of the release;
   c. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of Title 27, §20420; and
   d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the requirement [Title 27, §20425] to submit a delineation report within 90 days of when the Board directs the Discharger to begin the Evaluation Monitoring Program.

5. Release Beyond Facility Boundary
   Any time the Discharger concludes (or the Executive Officer directs the Discharger to conclude) that a release from the Landfill has proceeded beyond the facility boundary, the Discharger shall so notify persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

   a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
   b. Subsequent to initial notification, the Discharger shall provide updates to Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.
   c. Each time the Discharger sends a notification to Affected Persons (under a. or b., above), the Discharger shall, within seven days of sending such notification, provide the Board with both a copy of the notification and a current mailing list of Affected Persons.

PART IV: DEFINITION OF TERMS

A. AFFECTED PERSONS

Individuals who either own or reside upon the land that directly overlies any part of that portion of a gas or liquid phase release that may have migrated beyond the facility boundary.

B. CONCENTRATION LIMITS

The Concentration Limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium shall be either:

1. The constituent's statistically determined background value or interval limit, established using an Executive Officer approved method (Part II); or
2. In cases where the constituent's Method Detection Limit (MDL) is exceeded in less than 10% of historical samples, the MDL is the concentration limit (see Part II.A).

C. CONSTITUENTS OF CONCERN (COC)

A broad list of constituents likely to be in typical municipal solid waste. The COCs for this landfill are derived from USEPA recommendations and are listed in Part I.E.

D. MATRIX EFFECT

Any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

E. METHOD DETECTION LIMIT (MDL)

The lowest concentration at which a given laboratory, using a given analytical method to detect a given constituent, can differentiate with 99% reliability, between a sample which contains the constituent and one which does not. The Method Detection Limit shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory.

F. MONITORED MEDIUM/MEDIA

Those media that are monitored pursuant to this Monitoring and Reporting Program (groundwater, surface water, vadose zone gas and liquid, leachate, gas condensate, etc.)

G. MONITORING PARAMETERS

A short list of constituents and parameters used for the majority of monitoring activity. The Monitoring Parameters for this Unit are listed in Part I.E.

H. MONITORING PERIOD (frequency)

The duration of time during which a sampling event must occur. The Monitoring Period for the various media and programs is specified in Part I.E. The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

I. PRACTICAL QUANTITATION LIMIT (PQL)

The lowest acceptable calibration standard (acceptable as defined for a linear response or by actual curve fitting) times the sample extract dilution factor times any additional factors to account for Matrix Effect. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. Laboratory derived PQLs are expected to closely agree with published USEPA estimated quantitation limits (EQL).

J. STANDARD OBSERVATIONS

For adjacent surface waters, settling ponds, site surface water discharges, along the perimeter of the property, and at the waste unit(s), the following information shall be recorded (as appropriate) and included in monitoring reports:

- Floating and suspended materials of waste origin;
- Discoloration and turbidity;
- Evidence of odors;
- Evidence of beneficial use— presence of water-associated wildlife;
- Flow rate to the receiving waters;
- Evidence of liquid leaving or entering the Unit;
- Evidence of erosion and/or of exposed refuse;
- Stormwater discharge locations for evidence of non-stormwater discharges during dry seasons, and integrity during wet seasons.
- Evidence of ponded water at any point on the waste management facility;
- Integrity of drainage systems

K. RECEIVING WATERS

Any surface water which actually or potentially receives surface or groundwater which passes over, through, or under waste materials or contaminated soils.

L. VOLATILE ORGANIC COMPOUND COMPOSITE MONITORING PARAMETER (VOC composite)

VOCcomposite, a composite parameter that encompasses a variety of VOCs. The constituents addressed by the VOCcomposite Monitoring Parameter includes all VOCs detectable using USEPA Methods, 8260 (water) and TO-14 (gas). Field instruments will be used to measure quarterly methane concentrations.

Ordered by: Paul Jago
Executive Officer

Date: 7-13-99